EXECUTIVE SUMMARY

ES.1 INTRODUCTION AND AUTHORITY

The Calhoun County Navigation District (CCND) of Calhoun County, Texas, proposes to improve approximately 26 miles of the existing Matagorda Ship Channel (MSC) for the purpose of reducing maritime transportation costs, to increase operational efficiencies of commodities moving through the Port of Port Lavaca – Point Comfort (Port), and to improve navigation safety. The present configuration of the MSC constrains the movement of deep-draft liquid and dry bulk carriers by requiring light loading and delivery routing, which generate increased channel traffic and prohibits efficient use of terminal capacity.

The U.S. Army Corps of Engineers, Galveston District (USACE), under the authority of Section 404 (33 U.S.C. 1344) of the Clean Water Act, Section 10 (33 U.S.C. 403) of the Rivers and Harbors Act, and Section 103 of the Marine Protection Research and Sanctuary Act (33 U.S.C 1413), is the lead agency for the permit action. This Draft Environmental Impact Statement (DEIS) was prepared as required by the National Environmental Policy Act (NEPA) to present an evaluation of potential impacts associated with CCND's proposed Matagorda Ship Channel Improvement Project (MSCIP).

ES.2 PURPOSE AND NEED

The purpose of the proposed project is to widen and deepen the MSC to improve deep-draft transport of commerce to the Port. Up to 90% of vessels calling at the Port are currently reported to be light-loaded due to draft limitations of the present channel configuration. Proposed channel improvements could reduce or eliminate light-loading measures and allow larger cargo vessels to call on the Port. Recent economic evaluations indicate that annual tanker calls and dry bulk calls will increase at Gulf Coast ports (Hackett, 2003) and that larger ships will likely be added to the existing fleet in pursuit of economic efficiency (Waters et al., 2000).

The project need is the elimination of existing operational constraints to avoid vessel delays, thereby reducing shipping costs and logistical problems and increasing the safety of the channel. Restrictive drafts associated with the current configuration of the MSC force deep-draft vessels to light-load and constraints increase the cost of raw materials and products delivered to the Port and adjacent users. Proposed channel improvements would reduce transportation costs for existing commodities, which are crucial to the regional economy.

ES.3 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Various improvement plans for the MSC, which included alternatives for different channel widths and depths, and alternatives for dredged material placement, were evaluated to meet the needs of the proposed

project. The USACE is currently authorized to maintain the MSC's In-Bay Channel to an existing depth of –36 feet (ft) mean low tide (MLT) at a width of 200 ft and the Entrance channel to a depth of –38 ft MLT at a width of 300 ft. The CCND evaluated five alternatives to modify the In-Bay Channel of the MSC to depths ranging from –36 ft to –51 ft MLT and at widths ranging from 200 ft to 400 ft, and alternatives to modify the Entrance Channel to depths ranging from –38 ft to –53 ft MLT and at widths ranging from 300 ft to 600 ft. Ship simulation runs on various MSC configurations were accomplished under multiple meteorological and hydrographic variables to screen for critical channel conditions and to develop the optimal channel geometry.

Based on the ship simulation results, along with outputs from a transportation cost analysis, the CCND concluded benefits of the project could be optimized by: 1) improving the MSC's In-Bay Channel to a proposed depth and width of –44 ft MLT and 400 ft, respectively; 2) improving the MSC's Entrance Channel to a proposed depth and width of –46 ft MLT and 600 ft, respectively; and, 3) constructing a new turning basin to allow for a ship turning circle of 1,650 ft at a depth of –44 ft MLT. Since this geometry for the MSC's In-Bay and Entrance Channels would maximize navigation benefits and meet the purpose and need of the project, it was identified as the Proposed alternative for the MSCIP.

The Proposed alternative for the MSCIP would generate approximately 46.5 million cubic yards (mcy) of new work dredged material and approximately 257.5 mcy of future maintenance dredged material over the 50-year life of the project. Three general dredged material placement plans, along with the No-Action Plan, were identified and evaluated to assess costs and ecological impacts and benefits of each placement alternative. These placement plan alternatives included Upland Confined Placement, Gulf Unconfined Placement, and Multi-Use Placement. The Upland Confined Placement alternative entails placing all of the MSCIP's dredged material within upland confined sites. The Upland Confined Placement alternative does not provide for the beneficial use of dredged material. In addition, this alternative requires the acquisition of substantial acreage of land and has a high cost. Therefore the Upland Confined Placement alternative was eliminated from further consideration. The Gulf Unconfined Placement alternative involves the placement of the MSCIP's dredged material within Ocean Dredged Material Disposal Sites (ODMDS) located offshore of the Matagorda Peninsula. As with the Upland Confined Placement alternative, the Gulf Unconfined Placement alternative does not provide for the beneficial use of the dredged material, and the cost of transporting all of the dredged material to ODMDSs for offshore placement was determined to be cost prohibitive. Therefore, the Gulf Unconfined Placement alternative was removed from further consideration.

The third general dredged material placement plan that was evaluated is the Multi-Use Placement alternative. The Multi-Use Placement alternative entails placing both new work and future maintenance dredged material within a mix of upland, in-bay and offshore placement areas. An array of mixed placement scenarios was analyzed to identify the alternative that optimized environmental benefit outputs at least cost. A multi-agency Dredged Material Management Plan (DMMP) Workgroup served to guide the project proponent in developing placement plans to meet the project purpose while minimizing and mitigating for environmental impacts. Four mixed placement alternatives under the Multi-Use Placement

alternative were developed based on guidance from the DMMP workgroup and the public. Each of the four Multi-Use Placement alternative options (labeled in the DEIS as 1A, 1B, 2A and 2B) had a mix of different placement features with which to compare environmental benefits and costs. All four alternatives include placement features to receive new work and future maintenance dredged material to create in-bay upland sites; create in-bay marshes; provide for beach nourishment and shoreline protection; cap mercury laden bottom sediments; create oyster reefs; and place the material in ODMDSs. Environmental outputs for each of the four Multi-Use Placement alternative options were determined primarily by the Habitat Equivalency Analysis (HEA), as coordinated with the multi-agency DMMP Workgroup. The HEA outputs allowed the DMMP Workgroup to compare habitat functional values of impacted versus created areas for the various Multi-Use Placement alternative options. Multi-Use Placement alternative 2A was determined to have the maximum HEA value of the four alternatives at +4789.5 and is the option that is the least costly to implement. Therefore, the Multi-Use Placement alternative 2A is proposed as the plan to manage the MSCIP's new work and future maintenance dredged material.

The features of the Multi-Use Placement alternative 2A are:

1. create an in-bay upland site (PA A1) located south of the Port at the existing USACE in-bay dredged material PAs 18 and 19 with 3.3 mcy of new work material and 45.1 mcy of future maintenance material;
2. create a combination upland and marsh site (PA A2) along the northern shore of Cox Bay to eliminate future erosion in this area with 6.3 mcy of new work material;
3. create a clay core oyster reef (PAs OR1 and OR2) within Lavaca Bay with approximately 1.0 mcy of new work material;
4. provide nourishment (PAs BN1, BN2, and BN3) on public beaches along the Magnolia-Indianola shoreline with 1.9 mcy of new work material;
5. create an in-bay upland site (PA D) adjacent to the southwest side of the existing Dredge Island with 1.6 mcy of new work material and 14.8 mcy of maintenance material;
6. place submerged cap and create oyster reefs on (PA ER1) bottom sediments contaminated with elevated levels of mercury within Lavaca Bay southwest of Dredge Island with 0.4 mcy of new work stiff clay material, creating oyster reefs on the mounded caps;
7. cap in situ bottom sediments contaminated with elevated levels of mercury located in shallow waters along SH 35 and then create an upland site (PA ER2) with 2.1 mcy of new work material and 6.9 mcy of future maintenance material;
8. cap in situ bottom sediments contaminated with elevated levels of mercury located on the northern edge of Dredge Island and then create a transitional marsh and upland site (PA ER3) with 2.3 mcy of new work material and 13.2 mcy of future maintenance material;
9. protect the eroding shoreline at Sand Point by constructing armored earthen levees and in-bay marshes (PA G) with 4.7 mcy of new work material, and 0.4 mcy of in situ material;

10. create a terrestrial upland placement site (PA P1) located immediately south of Alamo Beach on agriculture lands with 1.0 mcy of new work material and 55 mcy of future maintenance;
11. place 108.9 mcy of future maintenance material in existing in-bay unconfined placement areas (PAs 5 to PA 12) located northeast of the MSC;
12. create a multi-use habitat site (PA H4) located north of Port O'Conner along the MSC to include marshes, submerged aquatic platforms, and bird island with 10.0 mcy of new work material;
13. place 13.6 mcy of future maintenance material from the MSC Entrance Channel at the existing Matagorda ODMDS (PA 1) located 2 miles offshore from the Matagorda Peninsula and 1,000 ft south of the MSC Entrance Channel centerline; and
14. place 8.8 mcy of new work soft clay material from the MSC In-Bay Channel and 3.2 mcy of new work mixed material from the MSC Entrance Channel at a proposed ODMDS site (PA O5) located approximately 3 miles offshore from the Matagorda Peninsula and 1,000 ft south of the MSC Entrance Channel centerline.

The DEIS carried forward the evaluation and impact analysis of the Proposed alternative to improve the MSC by deepening and widening the In-Bay Channel to –44 ft MLT and 400 ft, respectively, by deepening and widening the Entrance Channel to –46 ft MLT and 600 ft, respectively, and manage the placement of the dredged material as described above. Additionally, CCND proposes to construct a new turning basin at the intersection of the MSC and Alcoa Channel to accommodate larger vessels.

The No-Action alternative was also carried forward for evaluation. This alternative assumes the USACE denial of the permit, in which case the MSC would not be improved and navigation restrictions would continue. The No-Action alternative provides a baseline for a future-without-project conditions scenario to which the Proposed alternative can be compared.

ES.4 POTENTIAL ENVIRONMENTAL IMPACTS

The DEIS addresses the potential impacts of the proposed project on human and environmental issues identified during the public interest review, including placement of dredged material. All factors that may be relevant to the proposed project were considered. Among those factors are: dredged material management, air quality, shoreline erosion, economics, general environmental concerns, historic resources, protected species, navigation, recreation, water and sediment quality, energy needs, safety, hazardous materials, and, in general, the welfare of the people. The following provides a brief description of potential impacts that were identified.

Air Quality

The combustion of diesel fuel in internal combustion engines during the dredging operations of the proposed project would result in air emissions of CO, NO_x, PM, SO_2, and VOC. This includes marine vessels, onshore construction equipment (cranes, trucks, dozers, backhoes, etc.), and employee commuter vehicles. Routine maintenance dredging of the channel would also result in air emissions. The

maintenance emissions were conservatively estimated based on the ratio of volume of dredged material displaced from maintenance activities to the total volume of new work dredging. Emissions from construction and maintenance of the proposed channel improvement project were estimated using EPA-approved software and modeling tools. It is expected that air contaminant emissions from construction dredging activities would result in minor short-term impacts on air quality in the immediate vicinity of the dredging site. Due to the phased, one-time construction dredging process proposed, it is expected there would be no long-term impacts (beyond the project duration) to air quality in the area. Maintenance dredging activities are also expected to result in minor short-term impacts on air quality in the immediate vicinity of the dredging site. Emissions from maintenance dredging are not expected to result in a serious impact to the regional air quality or differ significantly from present maintenance dredging activities. All emissions are expected to be within the NAAQS and the rules and regulations of the EPA and the TCEQ.

Noise

Dredging and placement activities would generate noise from a variety of equipment, including pumps and generators, dredge tender barges, and tugboats. Noise levels associated with dredging activities would be less than existing ambient conditions at sensitive receivers beyond 4,100 ft from the channel. Therefore, short-term impacts related to these operations would be nearly identical to those that occur during current maintenance dredging. Onshore noise levels during placement activities are not expected to increase substantially and would be short-term. No permanent noise sources would be installed as part of the proposed project, thus no long-term noise impacts are expected.

Physiography, Topography, and Bathymetry

Local changes to bathymetry and topography are expected to occur as a result of the proposed project. Placement of dredged material would nourish approximately 3 miles of shoreline, provide protection from a breach along the peninsula separating Keller Bay from Matagorda Bay, and create marsh habitat in open bay areas. Deepening and widening the channel would result in a reduction in drawdown and wake heights for existing vessels. However, these changes are expected to have negligible impacts on the regional physiography, topography and bathymetry in the project area.

Geology, Mineral Resources, and Soils

No impacts are expected to occur to geology in the project area as a result of the proposed project.

A review of mineral resources, including oil and gas wells and pipelines, indicated that four plugged wells, five dry holes, two well-permitted locations, eight natural gas pipelines, and one ammonia pipeline occur in the footprint of proposed dredged material placement areas. Placement area boundaries may be reconfigured to avoid impacts and pipeline relocations will be assessed by the owners with lines being relocated if conditions warrant. No mitigation is expected for well sites, plugged wells, or dry holes.

Potential surface soil impacts could occur from the release of petroleum products during construction. Use of best management practices (BMPs) during construction would minimize this potential. No impacts to prime farmlands are expected.

Groundwater Hydrology

Potential impacts to groundwater could occur from accidental spill of petroleum products during construction. Use of BMPs during construction would minimize this potential.

Hazardous Material

The potential to encounter hazardous material during construction in the channel is limited. However, the industrial nature of the Point Comfort area increases the risk of encountering hazardous material during dredging and placement activities. Because portions of the area have been used for military training, there is some potential for encountering unexploded ordinance.

Water and Sediment Quality

Proposed channel improvements could result in a small (<1%) increase in tidal range and changes in salinity, especially during times of higher inflow. No significant impacts are expected to result from DO or turbidity changes, and no significant change in ambient or sediment mercury concentrations are expected. Mud waves from the placement of dredged material are not expected to result in the release of mercury impacted sediment. Routine tests of maintenance material dredged from the channel have not indicated cause for concern regarding use of the material. Proposed capping of mercury impacted sediment in Lavaca Bay would assist in the prevention of resuspending sediment with higher mercury concentrations during future actions. Construction of barge access channels through areas in Cox Bay with known at-depth mercury-impacted sediments may be unavoidable. If such sediments are encountered, they will be placed in an upland confined placement area. No increase in channel bottom velocities are expected to occur.

Commercial and Recreational Navigation

Minor delays to commercial navigation may occur during construction of the proposed channel improvements. The wider and deeper channel would allow larger vessels to call on the Port. This could reduce the number of vessel trips allowing greater shipping efficiencies. The larger channel dimensions would also improve navigation safety for existing commercial traffic. Recreational vessels would also experience delays during construction. However, no significant effects on recreational navigation uses of the channel are expected.

Vegetation and Wetlands

No significant impacts to upland vegetation are expected. Approximately 250 acres (ac) of submerged aquatic vegetation (SAV) would be protected by placement of dredged material. Additionally, about

325 ac of SAV-suitable sand platforms would be created by placement of dredged material. Anticipated salinity changes are not expected to be substantial enough to negatively affect SAV, and a reduction in wave energy may result in minor benefits to SAV beds along the shoreline north of Port O'Connor. Placement of dredged material may also result in the development of estuarine tidal flats. Predicted increases in tidal amplitude are not expected to significantly impact estuarine tidal flats.

Approximately 432 ac of estuarine marsh would be protected by placement of dredged material, and the DMMP would result in a net increase of about 587 ac of marsh in the bays. Changes in salinity likely to occur within the bay are well within the salinity tolerance and optimal ranges for the wetland communities in the study area. No loss or reduction in marsh function is anticipated. Changes in tidal amplitude may result in minor shifts in distribution of high salt/brackish marshes and low marsh. No negative impacts to existing shrub-scrub wetlands or fresh-intermediate wetlands are anticipated.

Terrestrial and Aquatic Wildlife (Including EFH)

Temporary, local impacts to terrestrial communities and habitats may occur during construction activities. However, the proposed DMMP would result in a net gain of upland and marsh habitat, beach nourishment, and a bird island, which would provide additional habitat in the study area. Conversion of a rice field to an upland placement area is not expected to have a significant impact on local wildlife resources.

Placement of dredged material and dredging activities would affect the benthic community where bay bottom is disturbed. Aquatic communities in the benthos are likely to shift from current composition to that of more opportunistic species. Repeated dredging may prevent the benthic community from fully developing to pre-construction communities. However, these species would still provide a food source to other organisms. Similar shifts in community composition can be expected at the maintenance material ODMDS. The benthic community at the new work material ODMDS is expected to recover fairly quickly following placement of the new work material.

No adverse impacts are expected to occur to finfish or shellfish populations as a result of anticipated salinity changes in the bays. The Proposed alternative is expected to increase the annual and cumulative habitat functional value in the bays, resulting in a significant benefit on the Matagorda Bay system as a whole, despite the loss of approximately 4,060 ac of open-bay bottom. Thus, recreational and commercial fisheries are not expected to be negatively impacted. Additionally, no significant impacts to essential fish habitat (EFH) are expected.

Construction of the Proposed alternative is expected to result in the loss of approximately 148 ac of oyster reefs and habitat. Additionally, salinity changes anticipated in the bays are estimated to result in a loss of about 106 ac of oyster reef production. However, approximately 298 ac of oyster reef would be created by placement of new-work dredged material from construction of the Proposed alternative.

Protected Species

Potential changes in salinity and tidal amplitude are not expected to significantly impact protected species. Increases and protection of marsh habitat and SAV, as well as beach nourishment, may provide some benefit to protected species in the area.

Dredging activities could result in the incidental take of sea turtles in the project area. However, restriction of hopper dredging activities to between December 1 and March 31, if possible, and the use of relocation trawlers working in front of the dredges, if required, would reduce the potential for these impacts. A Biological Assessment has been prepared and submitted with this DEIS as Appendix N. Coordination with U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) is ongoing.

Cultural Resources

Records review and remote-sensing surveys have been conducted along the MSC and at proposed in-bay placement areas. Five anomalies or known recorded sites were identified in placement area footprints and 20 anomalies were identified along the MSC. A cultural resources report will be submitted to the Texas Historical Commission (THC). Avoidance of all recorded anomalies is recommended and if unavoidable, close-order surveys will be recommended. THC has requested additional investigation of areas with a high potential for association with historic elements, such as the Indianola townsite. Efforts are ongoing to initiate surveys for all or portions of PAs A2, BN1, BN2, BN3, OR1, OR2, O5 (new-work ODMDS), and P1. Additional close-order surveys will be conducted for three anomalies identified within the channel improvement footprint and at PA G. Coordination with the THC and investigations will continue, as necessary.

Land Use, Recreation, Aesthetics, and Socioeconomics

No significant impacts to land use, recreation, aesthetics or socioeconomics are expected to result from the proposed project. Beach nourishment of public beaches and construction of marshes and bird islands in the area would result in benefits to recreation in the area. New upland areas created from placement of dredged material are not expected to negatively impact the visual quality of the area because they would be adjacent to existing upland and/or consistent with the bay setting. Reduced navigation restrictions and increased efficiency at the Port is likely to have a positive economic benefit in the local community, which could result in increased development in the area.

ES.5 COORDINATION AND PUBLIC INVOLVEMENT

Public involvement in the proposed project has occurred through public meetings and other outreach throughout the history of the project. The public, resource agencies, industry, local government, and other interested parties have been proactively informed about the project.

Public and agency concerns were identified at the public scoping meeting held April 25, 2006, at the Bauer Community Center, Port Lavaca, Texas. At this meeting the project was introduced and comments on the proposed project were solicited from attendees. Oral and written comments were collected at the meeting and written comments were collected throughout the scoping period, which ended May 25, 2006. In addition to the scoping meeting, the Calhoun Port Authority presented the proposed DMMP alternatives to the public on July 20, 2006.

A total of seven meetings of the DMMP Workgroup, comprising Federal and State resource agency representatives, the applicant, and consultants were held to discuss placement of dredged material from the project. Two additional agency workgroups were formed; the Aquatic Species Impact Workgroup and the Hydrodynamic/Salinity Modeling Workgroup. These workgroups met to develop a method to analyze potential project impacts and to oversee the modeling efforts that provided information on changes in hydrology and salinity.

This DEIS is being made available to all known Federal, State and local agencies as well as interested organizations and individuals. A list of document recipients is included in the DEIS in Section 9.0.